

Remarks

Claim 6 is canceled.

Claims 1, 3, 7 and 8 are amended.

Claims 1-5 and 7-21 are now pending and are under consideration.

Claim 1 is amended to incorporate the definitions of claim 6.

Claim 1 is also amended to change the lower temperature range from 120°C to 150°C.

Support is found in the second paragraph of page 4 of the disclosure. This amendment harmonizes the present claims with the disclosure of the priority document.

Claim 3 is amended to delete redundant matter.

Claim 7 is amended to properly depend on claim 1.

Claim 8 is amended to properly depend on claim 7.

No new matter is added.

Claims 1-21 are rejected under 35 USC 112, second paragraph, for reasons of record.

Regarding the term “polyolefin copolymers” of claim 2, suitable polyolefins are described in sections 1.-3. bridging pages 4 and 5 of the disclosure. Polyolefin copolymers are intended to be as described in section 3., “copolymers of monoolefins and diolefins with each other or with other vinyl monomers”. Applicants submit that this would be understood by those skilled in the art.

Regarding the “Me⁺” species of claim 14, line 3, Applicants point out that “Me” is defined as a monovalent metal atom or an ammonium ion further in the claim. It does not mean “methyl”.

The other 35 USC 112, second paragraph rejections are overcome by amendment as outlined above.

Applicants submit that the 35 USC 112, second paragraph rejections are addressed and are overcome.

Claim 14 is rejected under 35 USC 112, first paragraph, for reasons of record.

This rejection is also regarding the "Me" moiety.

These rejections are overcome as outlined above for the 35 USC 112, second paragraph rejections.

Claims 1-21 are rejected under 35 USC 102(e) as being anticipated by Saldivar, et al., published U.S. app. No. 2004/0077788.

The 35 USC 102(e) date of Saldivar is July 19, 2002.

The present application claims priority of June 20, 2002. Applicants submit that the present claims are fully supported by the priority document.

In view of this, Applicants submit that these 35 USC 102(e) rejections are addressed and are overcome.

Claims 1-21 are rejected under 35 USC 102(b) as anticipated by or, in the alternative, under 35 USC 103(a) as obvious over Robert, U.S. Pat. No. 5,945,492.

Applicants respectfully traverse these rejections.

Free radical-grafting reactions are usually performed in the presence of a free radical source such as a peroxide and a reactive monomer, such as, for example, acrylic acid. However, the use of free radical sources such as peroxides may cause undesired side reactions leading to problems during synthesis and processing (gel formation, crosslinking, molecular weight reduction) or during use. Typically the long-term thermal stability is reduced and/or the polymer cannot anymore be used in outdoor applications or in applications at elevated temperatures.

A further disadvantage of monomeric grafting processes is that the number of accessible monomers in a melt process is limited due to volatility, thermal stability and side reactions e.g. homopolymerization takes place in parallel to the grafting reaction resulting in incompatible polymer mixtures without chemical bonding.

Furthermore it is very difficult or even impossible to obtain long chain grafted structures from monomers via classical radical processes, as the lifetime of the growing radical chain is limited due to necessary high temperatures of a melt process.

The instant invention avoids the disadvantages of the prior art, by preparing in a first step a nitroxyl terminated oligomer or polymer, the molecular weight of which can be adjusted for example by the concentration of the nitroxyl compound, the monomer used, the reaction time (which is related to monomer conversion) and temperature. The nitroxyl terminated oligomer or polymer acts in a second step as a macroinitiator and the polymer radical derived from the macroinitiator is grafted onto the elastomeric or thermoplastic polymer or copolymer.

In other words the basic idea behind the invention is to prepare a macroinitiator in a first step (preferred molecular weight 1000 to 100 000 Dalton, see claim 18) and to graft this macronitiator to a thermoplastic or elastomeric polymer or copolymer. Disadvantages resulting from monomers in a graft process at elevated temperature are thereby avoided.

Robert discloses a process for preparing a graft thermoplastic polymer wherein the thermoplastic polymer (A) is grafted with a functional monomer in the presence of, for example, a nitroxyl radical (Abstract).

In the grafting step of the instant invention, no monomer is involved. Alternatively, a nitroxyl terminated oligomer or polymer is grafted to a thermoplastic or elastomeric polymer or copolymer.

In view of this discussion, Applicants submit that the 35 USC 102(b) and 35 USC 103(a) rejections are addressed and are overcome.

In view of all of the above, Applicants aver that each of the claim rejections are addressed and are overcome.

The Examiner is kindly requested to reconsider and to withdraw the present rejections.

Applicants submit that the present claims are in condition for allowance and respectfully request that they be found allowable.

Respectfully submitted,



Tyler A. Stevenson
Agent for Applicants
Reg. No. 46,388

Ciba Specialty Chemicals Corp.
540 White Plains Road
P.O. Box 2005
Tarrytown, NY 10591-9005
Tel. (914)785-2783
Fax (914)785-7102